

=> e schmitt joachim/au

E1 1 SCHMITT JERRY C/AU
E2 2 SCHMITT JIM/AU
E3 38 --> SCHMITT JOACHIM/AU
E4 9 SCHMITT JOACHIM J/AU
E5 3 SCHMITT JOACHIM M/AU
E6 31 SCHMITT JOACHIM P/AU
E7 1 SCHMITT JOANNE/AU
E8 20 SCHMITT JOCHEN/AU
E9 2 SCHMITT JOCHEN M/AU
E10 3 SCHMITT JOE/AU
E11 7 SCHMITT JOERG/AU
E12 4 SCHMITT JOERG J/AU

=> s e3-e9 and trypano?

L1 0 ("SCHMITT JOACHIM"/AU OR "SCHMITT JOACHIM J"/AU OR "SCHMITT
JOACHIM M"/AU OR "SCHMITT JOACHIM P"/AU OR "SCHMITT JOANNE"/AU
OR "SCHMITT JOCHEN"/AU OR "SCHMITT JOCHEN M"/AU) AND TRYPARNO?

=> e boehm guenther/au

E1 1 BOEHM GUENTER DR RER NAT/AU
E2 2 BOEHM GUENTER ING GRAD/AU
E3 71 --> BOEHM GUENTHER/AU
E4 2 BOEHM GUIDO/AU
E5 1 BOEHM GUIDO U/AU
E6 16 BOEHM GUNDO/AU
E7 3 BOEHM GUNTER/AU
E8 50 BOEHM GUNTHER/AU
E9 18 BOEHM GUSTAV/AU
E10 4 BOEHM GUSTAV A/AU
E11 10 BOEHM GUSTAV ADOLF/AU
E12 2 BOEHM GYORGY MIKLOS/AU

=> s e1-e3 and trypano?

L2 1 ("BOEHM GUENTER DR RER NAT"/AU OR "BOEHM GUENTER ING GRAD"/AU
OR "BOEHM GUENTHER"/AU) AND TRYPARNO?

=> d bib ab 1-

YOU HAVE REQUESTED DATA FROM 1 ANSWERS - CONTINUE? Y/(N):y

L2 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2004:510002 CAPLUS
DN 141:84624
TI Trans-sialidases and genes of Trypanosoma congolense and their
uses in enzymic sialidation and preparation of food and pharmaceuticals
IN Schauer, Roland; Tiralongo, Evelin; Boehm, Guenther; Stahl,
Bernd; Schrader, Silke
PA N.V. Nutricia, Neth.
SO Ger. Offen., 33 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	DE 10258400	A1	20040624	DE 2002-10258400	20021213
	CA 2509070	A1	20040701	CA 2003-2509070	20031211
	WO 2004055176	A2	20040701	WO 2003-EP14079	20031211
	WO 2004055176	A3	20050526		
	W: AL, AU, CA, CN, ID, JP, LT, LV, MK, NZ, RU, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,				
	IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	AU 2003294833	A1	20040709	AU 2003-294833	20031211
	EP 1570054	A2	20050907	EP 2003-785794	20031211

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

CN 1726279 A 20060125 CN 2003-80106002 20031211
JP 2006509515 T 20060323 JP 2004-559814 20031211
US 2007004656 A1 20070104 US 2005-538840 20050613
PRAI DE 2002-10258400 A 20021213
WO 2003-EP14079 W 20031211

AB The invention concerns enzymes from *T. congolense* which transfer sialic acids from a donor mol. to an acceptor mol. (trans-sialidases) as well as the nucleic acids encoding these enzymes. These enzymes may be used for enzymic sialization of acceptor mols. as well as for screening for inhibitors of the enzymes. Also disclosed are uses of the nucleic acids, enzymes, effectors, or sialization products for production of antigens, medicines, food or food supplements. Thus, two trans-sialidases were isolated from *T. congolense*. Both displayed a temperature optimum of 30-40° and a pH optimum of 6.5-8.5. The native mol. weight of one was 400-600 kDa, of the other, 120-180 kDa. Both contained subunits of 90 kDa.

=> e stahl bernd/au

E1 1 STAHL BENTON M/AU
E2 1 STAHL BERNARD U/AU
E3 147 --> STAHL BERND/AU
E4 16 STAHL BERNHARD/AU
E5 46 STAHL BERNHARD U/AU
E6 1 STAHL BERRY/AU
E7 1 STAHL BERT/AU
E8 2 STAHL BERTHAMARIE/AU
E9 23 STAHL BERTIL/AU
E10 1 STAHL BETH A/AU
E11 5 STAHL BETTINA/AU
E12 70 STAHL BISKUP E/AU

=> s e1-e3 and trypano?

L3 4 ("STAHL BENTON M"/AU OR "STAHL BERNARD U"/AU OR "STAHL BERND"/AU
) AND TRYpano?

=> dup rem l3

PROCESSING COMPLETED FOR L3

L4 3 DUP REM L3 (1 DUPLICATE REMOVED)

=> d bib ab 1-

YOU HAVE REQUESTED DATA FROM 3 ANSWERS - CONTINUE? Y/(N):y

L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:510002 CAPLUS

DN 141:84624

TI Trans-sialidases and genes of *Trypanosoma congolense* and their
uses in enzymic sialidation and preparation of food and pharmaceuticals
IN Schauer, Roland; Tiralongo, Evelin; Boehm, Guenther; Stahl, Bernd
; Schrader, Silke

PA N.V. Nutricia, Neth.

SO Ger. Offen., 33 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10258400	A1	20040624	DE 2002-10258400	20021213
	CA 2509070	A1	20040701	CA 2003-2509070	20031211
	WO 2004055176	A2	20040701	WO 2003-EP14079	20031211
	WO 2004055176	A3	20050526		

W: AL, AU, CA, CN, ID, JP, LT, LV, MK, NZ, RU, US
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IT, LU, MC, NL, PT, RO, SE, SI, SK, TR

AU 2003294833	A1	20040709	AU 2003-294833	20031211
EP 1570054	A2	20050907	EP 2003-785794	20031211

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

CN 1726279	A	20060125	CN 2003-80106002	20031211
JP 2006509515	T	20060323	JP 2004-559814	20031211
US 2007004656	A1	20070104	US 2005-538840	20050613

PRAI DE 2002-10258400 A 20021213
WO 2003-EP14079 W 20031211

AB The invention concerns enzymes from *T. congolense* which transfer sialic acids from a donor mol. to an acceptor mol. (trans-sialidases) as well as the nucleic acids encoding these enzymes. These enzymes may be used for enzymic sialization of acceptor mols. as well as for screening for inhibitors of the enzymes. Also disclosed are uses of the nucleic acids, enzymes, effectors, or sialization products for production of antigens, medicines, food or food supplements. Thus, two trans-sialidases were isolated from *T. congolense*. Both displayed a temperature optimum of 30-40° and a pH optimum of 6.5-8.5. The native mol. weight of one was 400-600 kDa, of the other, 120-180 kDa. Both contained subunits of 90 kDa.

L4 ANSWER 2 OF 3 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 1
AN 1993:275368 BIOSIS
DN PREV199396005593
TI Proteolytic release of cell surface proteins during differentiation of *Trypanosoma brucei*.
AU Ziegelbaur, Karl [Reprint author]; Stahl, Bernd; Karas, Michael;
Stierhof, York-Dieter; Overath, Peter
CS Max-Planck-Inst. Biol., Abt. Membranbiochem., Corrensstr. 38, D7400
Tuebingen, Germany
SO Biochemistry, (1993) Vol. 32, No. 14, pp. 3737-3742.
CODEN: BICHAW. ISSN: 0006-2960.
DT Article
LA English
ED Entered STN: 9 Jun 1993
Last Updated on STN: 9 Jun 1993

AB The surface of the bloodstream forms of *Trypanosoma brucei* is covered by the abundant glycosylphosphatidylinositol-anchored variant surface protein (mfVSG). During differentiation of bloodstream forms to the insect-stage or procyclic forms, the mfVSG is replaced by another glycoprotein, designated procyclic acidic repetitive protein (PARP) or procyclin. Shortly after differentiation is triggered in vitro, a cell-associated fragment of mfVSG can be detected which is subsequently released into the culture medium. In the case of the mfVSG of the variant clone MIT at 1.4 (470 amino acid residues), fragmentation occurs close to the COOH-terminus (Gln-433 or Thr-434) as shown by NH-2-terminal sequencing, metabolic labeling experiments, and molecular weight determinations by laser desorption/ionization mass spectrometry. Two invariant surface glycoproteins, which are anchored in the membrane by hydrophobic sequences close to their COOH-termini, are lost from the surface with similar kinetics as mfVSG. The data suggest that trypanosomes synthesize or activate a developmentally-regulated proteinase which degrades the glycoproteins at the surface, at the membrane lining the flagellar pocket, and/or in an early endocytic compartment.

L4 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1991:224704 CAPLUS
DN 114:224704
TI The use of fast atom bombardment and laser desorption mass spectrometry in

the analysis of complex carbohydrates
 AU Egge, Heinz; Peter-Katalinic, Jasna; Karas, Michael; Stahl, Bernd
 CS Inst. Physiol. Chem., Univ. Bonn, Bonn, Germany
 SO Pure and Applied Chemistry (1991), 63(4), 491-8
 CODEN: PACHAS; ISSN: 0033-4545
 DT Journal; General Review
 LA English
 AB A review with 45 refs. summarizing results of the mass spectrometric anal.
 of oligosaccharides of human milk, of phosphoinositol-linked glycans from
 the variant surface glycoprotein of Trypanosoma brucei, and of
 some high-mol.-weight glycosphingolipids with up to 40 sugar residues that
 are present in rabbit erythrocyte membranes.

=> e schauer roland/au

E1	1	SCHAUER ROBERTA/AU
E2	2	SCHAUER ROGER W/AU
E3	465 -->	SCHAUER ROLAND/AU
E4	21	SCHAUER ROLF/AU
E5	16	SCHAUER ROLF J/AU
E6	3	SCHAUER ROLF JOSEF/AU
E7	1	SCHAUER RON J/AU
E8	1	SCHAUER RON VERN/AU
E9	2	SCHAUER RONALD/AU
E10	6	SCHAUER RONALD VERN/AU
E11	43	SCHAUER S/AU
E12	7	SCHAUER S E/AU

=> s e3 and trypano?

L5 23 "SCHAUER ROLAND"/AU AND TRYpano?

=> dup rem l5

PROCESSING COMPLETED FOR L5

L6 15 DUP REM L5 (8 DUPLICATES REMOVED)

=> d bib ab 1-

YOU HAVE REQUESTED DATA FROM 15 ANSWERS - CONTINUE? Y/(N):y

L6 ANSWER 1 OF 15 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 AN 2007:246176 BIOSIS
 DN PREV200700247991
 TI Nonradioactive trans-sialidase screening assay.
 AU Schrader, Silke [Reprint Author]; Schauer, Roland
 CS Univ Cologne, Biochem Inst, Cologne, Germany
 SO Brockhausen, I [Editor]. Methods in Molecular Biology, (2006) pp. 93-107.
 Methods in Molecular Biology.
 Publisher: HUMANA PRESS INC, 999 RIVERVIEW DR, STE.208, TOTOWA, NJ
 07512-1165 USA. Series: METHODS IN MOLECULAR BIOLOGY.
 ISSN: 1064-3745. ISBN: 978-1-58829-553-8(H).
 DT Book; (Book Chapter)
 LA English
 ED Entered STN: 18 Apr 2007
 Last Updated on STN: 18 Apr 2007
 AB Trans-sialidase (TS; E.C. 3.2.1.18) catalyzes the transfer of preferably
 alpha 2,3-linked sialic acid to another glycan or glycoconjugate, forming
 a new alpha 2,3-linkage to galactose or N-acetylgalactosamine. In the
 absence of an appropriate acceptor, TS acts as a sialidase, hydrolytically
 releasing glycosidically linked sialic acid. Interest in TS has increased
 rapidly in recent years owing to its great relevance to the pathogenicity
 of trypanosomes and its possible application in the
 regiospecific synthesis of sialylated carbohydrates and glycoconjugates.
 Recently, the authors described a newly developed nonradioactive screening
 test for monitoring TS activity (1). In this highly sensitive and

specific assay, 4-methylumbelliferyl-beta-D-galactoside is used as acceptor substrate and sialyllactose as donor to fluorimetrically detect enzyme activity in the low mU range (similar to 0.1-1 mU/mL possible). The test can be applied to screen a large number of samples quickly and reliably during enzyme purification, for testing inhibitors, and for monitoring TS activity during the production of monoclonal antibodies (2). This chapter focuses on the main steps of this assay and gives detailed instructions for performing a nonradioactive TS 96-well-plate fluorescence test. In addition, it describes the controls necessary when starting to monitor an unknown TS and facts to be considered when testing new substrates and inhibitors.

L6 ANSWER 2 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 1
AN 2006:1238052 CAPLUS
DN 146:374653

TI Nonradioactive Trans-sialidase screening assay
AU Schrader, Silke; Schauer, Roland
CS Biochemisches Institut, University of Koeln, Cologne, Germany
SO Methods in Molecular Biology (Totowa, NJ, United States) (2006),
347(Glycobiology Protocols), 93-107
CODEN: MMBIED; ISSN: 1064-3745

PB Humana Press Inc.

DT Journal

LA English

AB Trans-sialidase (TS; E.C. 3.2.1.18) catalyzes the transfer of preferably α 2,3-linked sialic acid to another glycan or glycoconjugate, forming a new α 2,3-linkage to galactose or N-acetylgalactosamine. In the absence of an appropriate acceptor, TS acts as a sialidase, hydrolytically releasing glycosidically linked sialic acid. Interest in TS has increased rapidly in recent years owing to its great relevance to the pathogenicity of trypanosomes and its possible application in the regiospecific synthesis of sialylated carbohydrates and glycoconjugates. Recently, the authors described a newly developed nonradioactive screening test for monitoring TS activity. In this highly sensitive and specific assay, 4-methylumbelliferyl- β -D-galactoside is used as acceptor substrate and sialyllactose as donor to fluorimetrically detect enzyme activity in the low mil range (.apprx.0.1-1 mU/mL possible). The test can be applied to screen a large number of samples quickly and reliably during enzyme purification, for testing inhibitors, and for monitoring TS activity during the production of monoclonal antibodies. This chapter focuses on the main steps of this assay and gives detailed instructions for performing a nonradioactive TS 96-well-plate fluorescence test. In addition, it describes the controls necessary when starting to monitor an unknown TS and facts to be considered when testing new substrates and inhibitors.

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2004:510002 CAPLUS
DN 141:84624

TI Trans-sialidases and genes of Trypanosoma congolense and their
uses in enzymic sialidation and preparation of food and pharmaceuticals
IN Schauer, Roland; Tiralongo, Evelin; Boehm, Guenther; Stahl,
Bernd; Schrader, Silke

PA N.V. Nutricia, Neth.

SO Ger. Offen., 33 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	DE 10258400	A1	20040624	DE 2002-10258400	20021213
	CA 2509070	A1	20040701	CA 2003-2509070	20031211

WO 2004055176	A2	20040701	WO 2003-EP14079	20031211
WO 2004055176	A3	20050526		
W: AL, AU, CA, CN, ID, JP, LT, LV, MK, NZ, RU, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
AU 2003294833	A1	20040709	AU 2003-294833	20031211
EP 1570054	A2	20050907	EP 2003-785794	20031211
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1726279	A	20060125	CN 2003-80106002	20031211
JP 2006509515	T	20060323	JP 2004-559814	20031211
US 2007004656	A1	20070104	US 2005-538840	20050613
PRAI DE 2002-10258400	A	20021213		
WO 2003-EP14079	W	20031211		

AB The invention concerns enzymes from *T. congolense* which transfer sialic acids from a donor mol. to an acceptor mol. (trans-sialidases) as well as the nucleic acids encoding these enzymes. These enzymes may be used for enzymic sialization of acceptor mols. as well as for screening for inhibitors of the enzymes. Also disclosed are uses of the nucleic acids, enzymes, effectors, or sialization products for production of antigens, medicines, food or food supplements. Thus, two trans-sialidases were isolated from *T. congolense*. Both displayed a temperature optimum of 30-40° and a pH optimum of 6.5-8.5. The native mol. weight of one was 400-600 kDa, of the other, 120-180 kDa. Both contained subunits of 90 kDa.

L6 ANSWER 4 OF 15 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN DUPLICATE 2

AN 2003:375019 BIOSIS

DN PREV200300375019

TI Two trans-sialidase forms with different sialic acid transfer and sialidase activities from *Trypanosoma congolense*.

AU Tiralongo, Evelin; Schrader, Silke; Lange, Hans; Lemke, Hilmar; Tiralongo, Joe; Schauer, Roland [Reprint Author]

CS Biochemisches Institut, Universitaet zu Kiel, Olshausenstrasse 40, Kiel, 24098, Germany
schauer@biochem.uni-kiel.de

SO Journal of Biological Chemistry, (June 27 2003) Vol. 278, No. 26, pp. 23301-23310. print.

CODEN: JBCHA3. ISSN: 0021-9258.

DT Article

LA English

ED Entered STN: 13 Aug 2003

Last Updated on STN: 13 Aug 2003

AB Trypanosomes express an enzyme called trans-sialidase (TS), which enables the parasites to transfer sialic acids from the environment onto trypanosomal surface molecules. Here we describe the purification and characterization of two TS forms from the African trypanosome *Trypanosoma congolense*. The purification of the two TS forms using a combination of anion exchange chromatography, isoelectric focusing, gel filtration, and subsequently, antibody affinity chromatography resulted, in both cases, in the isolation of a 90-kDa monomer on SDS-PAGE, which was identified as trans-sialidase using micro-sequencing. Monoclonal antibody 7/23, which bound and partially inhibited TS activity, was found in both cases to bind to a 90-kDa protein. Both TS forms possessed sialidase and transfer activity, but markedly differed in their activity ratios. The TS form with a high transfer-to-sialidase activity ratio, referred to as TS-form 1, possessed a pI of pH 4-5 and a molecular mass of 350-600 kDa. In contrast, the form with a low transfer-to-sialidase activity ratio, referred to as TS-form 2, exhibited a pI of pH 5-6.5 and a molecular mass of 130-180 kDa. Both TS forms were not significantly inhibited by known sialidase inhibitors and revealed no significant differences in donor and acceptor substrate specificities; however, TS-form 1 utilized various acceptor substrates

with a higher catalytic efficiency. Interestingly, glutamic acid-alanine-rich protein, the surface glycoprotein, was co-purified with TS-form 1 suggesting an association between both proteins.

- L6 ANSWER 5 OF 15 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 3
AN 2003:525432 BIOSIS
DN PREV200300528766
TI Trans-sialidase-like sequences from *Trypanosoma congolense*
conserve most of the critical active site residues found in other
trans-sialidases.
AU Tiralongo, Evelin; Martensen, Ilka; Groetzinger, Joachim; Tiralongo, Joe;
Schauer, Roland [Reprint Author]
CS Biochemisches Institut, Christian-Albrechts-Universitaet zu Kiel,
Olshausenstrasse 40, D-24098, Kiel, Germany
SO Biological Chemistry, (August 2003) Vol. 384; No. 8, pp. 1203-1213. print.
ISSN: 1431-6730.
DT Article
LA English
ED Entered STN: 12 Nov 2003
Last Updated on STN: 12 Nov 2003
AB *Trypanosoma congolense* is the agent of Nagana, the
trypanosomiasis in African ruminants. Trypanosomes
express an enzyme called trans-sialidase, which is believed to play an
important role in maintaining pathogenicity of the parasites. Thus far,
only two complete trans-sialidase sequences have been characterised, one
from the American trypanosome *T. cruzi* and one from the African
trypanosome *T. brucei*. Although the crystal structure of
T. cruzi trans-sialidase has recently been published (Buschiazzi et al.,
Mol. Cell 10 (2002), pp. 757-768), a number of questions concerning the
exact transfer mechanism remain unanswered. The availability of further
trans-sialidase sequences will ensure a better understanding of how
transfer activity can be achieved and will provide the opportunity to
develop highly specific, structure-based trans-sialidase inhibitors.
Utilising a PCR-based approach two different trans-sialidase gene copies
from *T. congolense* were identified, which share only 50% identity with
each other, but show significant similarity with known viral, bacterial
and trypanosomal sialidases and trans-sialidases. In both
partial sequences most of the critical active site residues common to
other trypanosomal sialidases and trans-sialidases are
conserved. This is further illustrated by modelling the active site of
the longer of the two partial gene sequences.
- L6 ANSWER 6 OF 15 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 4
AN 2004:193248 BIOSIS
DN PREV200400207215
TI A nonradioactive 96-well plate assay for screening of trans-sialidase
activity.
AU Schrader, Silke; Tiralongo, Evelin; Paris, Gaston; Yoshino, Teruo;
Schauer, Roland [Reprint Author]
CS Biochemisches Institut, Christian-Albrechts-Universitaet zu Kiel, 24098,
Kiel, Germany
schauer@biochem.uni-kiel.de
SO Analytical Biochemistry, (November 15 2003) Vol. 322, No. 2, pp. 139-147.
print.
ISSN: 0003-2697 (ISSN print).
DT Article
LA English
ED Entered STN: 14 Apr 2004
Last Updated on STN: 14 Apr 2004
AB Trans-sialidase (E.C. 3.2.1.18) catalyzes the transfer of preferably
alpha2,3-linked sialic acid to another glycan or glycoconjugate, forming a
new alpha2,3 linkage to galactose or N-acetylgalactosamine. Here, we

describe a nonradioactive 96-well plate fluorescence test for monitoring trans-sialidase activity with high sensitivity, specificity, and reproducibility using sialyllactose and 4-methylumbelliferyl-beta-D-galactoside as donor and acceptor substrates, respectively. The assay conditions were optimized using the trans-sialidase from *Trypanosoma congolense* and its general applicability was confirmed with recombinant trans-sialidase from *Trypanosoma cruzi*. Using this procedure, a large number of samples can be tested quickly and reliably, for instance in monitoring trans-sialidase during enzyme purification and the production of monoclonal antibodies, for enzyme characterization, and for identifying potential substrates and inhibitors. The trans-sialidase assay reported here was capable of detecting trans-sialidase activity in the low-mU range and may be a valuable tool in the search for further trans-sialidases in various biological systems.

L6 ANSWER 7 OF 15 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 AN 2001:93151 BIOSIS
 DN PREV200100093151
 TI Trypanosomal transsialidase; a multi-talented
 "glycosyltransferase".
 AU Raudies, Evelin [Reprint author]; Schrader, Silke [Reprint author];
 Engstler, Markus; Schauer, Roland [Reprint author]
 CS Biochemisches Institut, Christian-Albrechts-Universitaet zu Kiel, 24098,
 Kiel, Germany
 SO Glycoconjugate Journal, (January-February, 2000) Vol. 17, No. 1-2, pp. 56.
 print.
 Meeting Info.: Second International Glycosyltransferase Symposium.
 Toronto, Ontario, Canada. May 12-14, 2000.
 ISSN: 0282-0080.
 DT Conference; (Meeting)
 Conference; Abstract; (Meeting Abstract)
 LA English
 ED Entered STN: 21 Feb 2001
 Last Updated on STN: 12 Feb 2002

L6 ANSWER 8 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 1997:531295 CAPLUS
 DN 127:231077
 TI Chemical synthesis of 4-trifluoromethylumbelliferyl- α -D-N-
 acetylneuraminic acid glycoside and its use for the fluorometric detection
 of poorly expressed natural and recombinant sialidases
 AU Engstler, Markus; Talhouk, Jamil W.; Smith, Robert E.; Schauer,
 Roland
 CS Biochemisches Institut, Christian-Albrechts-Universitat, Kiel, D-24098,
 Germany
 SO Analytical Biochemistry (1997), 250(2), 176-180
 CODEN: ANBCA2; ISSN: 0003-2697
 PB Academic
 DT Journal
 LA English
 AB When compared to bacterial or viral sialidases, eukaryotic sialidases are
 expressed at lower levels and frequently show poor specific activities.
 The identification and characterization of sialidases from eukaryotes have
 been slowed down due to the limited sensitivity of available sialidase
 substrates. Therefore, we chemical synthesized a fluorogenic compound,
 4-trifluoromethylumbelliferyl- α -D-N-acetylneuraminic acid
 (CF3MU-Neu5Ac), and tested its use as a substrate for eight different
 sialidases, including enzymes from viral, bacterial, and eukaryotic
 sources. Kinetic anal. revealed CF3MU-Neu5Ac to be a very sensitive
 sialidase substrate. Furthermore, this substance proves to be perfectly
 suitable for the in vivo examination of sialidases and for the detection of
 recombinant sialidase by means of expression cloning.

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 9 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 1994:675036 CAPLUS
 DN 121:275036
 TI N-(4-nitrophenyl)oxamic acid and related N-acylanilines are non-competitive inhibitors of *Vibrio cholerae* sialidase but do not inhibit *Trypanosoma cruzi* or *Trypanosoma brucei* trans-sialidases
 AU Engstler, Markus; Ferrero-Garcia, Miguel A.; Parodi, Armando J.; Schauer, Roland; Storz-Eckerlin, Thomas; Vasella, Andrea; Witzig, Christian; Zhu, Xiaoying
 CS Biochemisches Institut, Universitaet Kiel, Kiel, D-24118, Germany
 SO Helvetica Chimica Acta (1994), 77(4), 1166-74
 CODEN: HCACAV; ISSN: 0018-019X
 DT Journal
 LA English
 AB N-(4-Nitrophenyl)oxamic acid (I), N-(2-fluoro-4-nitrophenyl)oxamic acid, N-(4-nitrophenyl)trifluoroacetamide, and N-(2-methoxy-4-nitrophenyl)trifluoroacetamide are non-competitive inhibitors of *Vibrio cholerae* sialidase with K_i -values ranging from 2.66 to 5.18 + 1014 M. These compds., and N-acetylneuraminic-acid analogs do not inhibit the sialidase and trans-sialidase activities from *Trypanosoma cruzi*; nor does I inhibit the corresponding enzyme activities from *T. brucei*.

L6 ANSWER 10 OF 15 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 AN 1993:373907 BIOSIS
 DN PREV199345045332
 TI Sialidases from African trypanosomes.
 AU Engstler, Markus; Schauer, Roland
 CS Biochemisches Inst., Christian-Albrechts-Univ., Olshausenstrasse 40, D-2300 Kiel 1, Germany
 SO Parasitology Today, (1993) Vol. 9, No. 6, pp. 222-225.
 CODEN: PATOE2. ISSN: 0169-4758.
 DT Article
 LA English
 ED Entered STN: 12 Aug 1993
 Last Updated on STN: 13 Aug 1993

L6 ANSWER 11 OF 15 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 AN 1993:523988 BIOSIS
 DN PREV199396137395
 TI The developmentally regulated trans-sialidase from *Trypanosoma brucei* sialylates the procyclic acidic repetitive protein.
 AU Engstler, Markus; Reuter, Gerd; Schauer, Roland
 CS Biochemisches Inst., Christian-Albrechts-Universitaet, Olshausenstr. 40, D-24098 Kiel, Germany
 SO Molecular and Biochemical Parasitology, (1993) Vol. 61, No. 1, pp. 1-14.
 CODEN: MBIPDP. ISSN: 0166-6851.
 DT Article
 LA English
 ED Entered STN: 19 Nov 1993
 Last Updated on STN: 13 Jan 1994
 AB A developmentally regulated trans-sialidase activity is present on the surface of procyclic *Trypanosoma brucei*. Bloodstream stages display no trans-sialidase activity. *T. brucei* trans-sialidase is capable of transferring sialic acids from a variety of glycoconjugates into new glycosidic linkages without requirement for CMP-Neu5Ac. The enzyme is linked to the plasma-membrane via a GPI-PLC-resistant GPI-anchor. The comparison of enzymic and structural features of sialidase and trans-sialidase suggests that the two activities may be catalyzed by the same protein, since highly enriched sialidase fractions display trans-sialidase activity. 2-Deoxy-2,3-didehydro-N-acetylneuraminic acid is only a poor inhibitor for the two enzymic activities. Sialic acids are

transferred to alpha(2-3)-positions of terminal beta-galactose residues of oligosaccharides and glycoconjugates at various rates. Neu5Ac-alpha(2-3)-lactose is the best trans-sialylation donor tested. Lewis' is a poor sialic acid acceptor. T. brucei trans-sialidase utilizes serum glycoconjugates, human and bovine erythrocytes as sialic acid donors, and resialylates sialidase-treated erythrocytes. The enzyme transfers sialic acids from the GPI-anchor of procyclic acidic repetitive protein (PARP) onto lactose and vice versa. Also structures within a variant surface glycoprotein (sVSG MITat. 1.7.) can be trans-sialylated.

L6 ANSWER 12 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1992:607626 CAPLUS

DN 117:207626

TI Purification and characterization of a novel sialidase found in procyclic culture forms of Trypanosoma brucei

AU Engstler, Markus; Reuter, Gerd; Schauer, Roland

CS Biochem. Inst., Christian-Albrechts-Univ., Kiel, Germany

SO Molecular and Biochemical Parasitology (1992), 54(1), 21-30

CODEN: MBIPDP; ISSN: 0166-6851

DT Journal

LA English

AB A membrane-bound sialidase (EC 3.2.1.18) (I) was found in procyclic trypomastigotes of T. brucei. The mammalian stage bloodstream form, however, displayed no I activity. This I was an integral surface protein, linked to the membrane via a glycosylphosphatidylinositol anchor. After osmotic lysis and solubilization with Triton CF-54, I was purified 1900-fold by gel filtration and ion-exchange chromatog. Its size, as determined by conventional and HPLC, was 67 kDa. I was active over a broad pH and temperature range with optima at pH 6.9 and 35°, resp. No loss of activity was observed after 4 freeze-thaw cycles. T. brucei I was inhibited by N-(4-nitrophenyl)oxamic acid and 2-deoxy-2,3-didehydro-N-acetylneuraminic acid, the latter, however, being less effective. N-Acetylneuraminic acid showed no inhibitory effect, whereas a variety of metal ions were potent inhibitors. I was activated by di- and tricarboxylic acids, but inhibited by Cl-. The relative hydrolysis rates of various sialic acid-containing compds. revealed that de-O-acetylated bovine submandibular gland mucin was the preferred substrate and that $\alpha(2-3)$ -linkages were hydrolyzed faster than $\alpha(2-6)$ -linkages.

L6 ANSWER 13 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1989:627986 CAPLUS

DN 111:227986

TI Diagnosis of infections by immunoassay for microbial enzymes

IN Schauer, Roland

PA Ferring Biotechnik G.m.b.H., Fed. Rep. Ger.

SO Ger. Offen., 4 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3720655	A1	19890105	DE 1987-3720655	19870623
	DE 3720655	C2	19890713		
PRAI	DE 1987-3720655		19870623		

AB Infections or contamination of biol. substrates with microorganisms are specifically detected by heterogeneous immunoassay for enzymes produced by the microorganisms. Thus, a sheep antibody to Clostridium perfringens sialidase was immobilized in wells of a microtiter plate and incubated with sample or sialidase-containing stds. The wells were washed, incubated with a 2nd antibody from rabbits to C. perfringens sialidase, washed, incubated with peroxidase-labeled goose anti-rabbit Ig, washed, and incubated with peroxidase substrate (o-phenylenediamine and H2O2), and the intensity of the yellow color formed was determined for diagnosis of gas

gangrene.

L6 ANSWER 14 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1988:182574 CAPLUS
DN 108:182574
TI Isolation and properties of a sialidase from *Trypanosoma rangeli*
AU Reuter, Gerd; Schauer, Roland; Prioli, Reginaldo; Pereira,
Miercio E. A.
CS Biochem. Inst., Christian-Albrechts-Univ., Kiel, D-2300, Fed. Rep. Ger.
SO Glycoconjugate Journal (1987), 4(4), 339-48
CODEN: GLJOEW; ISSN: 0282-0080
DT Journal
LA English
AB In the culture supernatant fraction of *T. rangeli*, a sialidase was present with an activity of 0.1 units/mg protein. This enzyme was purified about 700-fold almost to homogeneity by gel chromatog. on Sephadex G-100 and Blue Sepharose, and affinity chromatog. on 2-deoxy-2,3-didehydroneuraminic acid and horse submandibular gland mucin, both immobilized on Sepharose. The pH optimum was at 5.4-5.6, and the mol. weight by gel chromatog., HPLC and SDS-PAGE was 70,000. The substrate specificity of the enzyme was comparable to bacterial, viral, and mammalian sialidases. 4-O-Acetylated sialyl derivs. were resistant towards the action of this sialidase. The enzyme activity was inhibited by 2-deoxy-2,3-didehydro-N-acetylneuraminic acid, Hg²⁺ ions, and p-nitrophenyloxamic acid; it was not dependent on the presence of Ca²⁺ Mn²⁺, or Mg²⁺ ions.

L6 ANSWER 15 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1983:518984 CAPLUS
DN 99:118984
TI The occurrence of N-acetyl- and N-glycoloyneuraminic acid in *Trypanosoma cruzi*
AU Schauer, Roland; Reuter, Gerd; Muehlfordt, Heinz; Andrade,
Arnaldo F. B.; Pereira, Miercio E. A.
CS Biochem. Inst., Univ. Kiel, Kiel, Fed. Rep. Ger.
SO Hoppe-Seyler's Zeitschrift fuer Physiologische Chemie (1983), 364(8), 1053-7
CODEN: HSZPAZ; ISSN: 0018-4888
DT Journal
LA English
AB Different strains of *T. cruzi* were analyzed to have 65-105 µg sialic acid/1010 cells. By thin-layer chromatog., and in part by gas-liquid chromatog. and gas-liquid chromatog.-mass spectrometry, all strains were found to contain N-acetyl- and N-glycolylneuraminic acid in various ratios. After incubation of the parasites with either [3H]acetate or N-acetyl-[3H]mannosamine, no radioactivity was found in the sialic acids, thus leading to the suggestion that the parasites are unable to synthesize sialic acids from their precursors.

=> e tiralongo evelin/au

E1	7	TIRALONGO E/AU
E2	1	TIRALONGO EMILIA/AU
E3	12	--> TIRALONGO EVELIN/AU
E4	12	TIRALONGO J/AU
E5	36	TIRALONGO JOE/AU
E6	5	TIRALONGO M/AU
E7	3	TIRALOSI G/AU
E8	1	TIRALOVA Z/AU
E9	19	TIRALTI M C/AU
E10	1	TIRALTI M CRISTINA/AU
E11	4	TIRALTI MARIA CRISTINA/AU
E12	11	TIRAM E/AU

=> s e3

L7 12 "TIRALONGO EVELIN"/AU

=> dup rem 17

PROCESSING COMPLETED FOR L7

L8 6 DUP REM L7 (6 DUPLICATES REMOVED)

=> d.bib ab 1-

YOU HAVE REQUESTED DATA FROM 6 ANSWERS - CONTINUE? Y/(N):y

L8 ANSWER 1 OF 6 MEDLINE on STN

AN 2007260161 IN-PROCESS

DN PubMed ID: 17442034

TI Use of complementary and alternative medicine among people living with diabetes: literature review.

AU Chang Hsiao-yun; Wallis Marianne; Tiralongo Evelin

CS School of Nursing and Midwifery, Griffith University, Gold Coast, Queensland, Australia.. chang369@gmail.com

SO Journal of advanced nursing, (2007 May) Vol. 58, No. 4, pp. 307-19.

Electronic Publication: 2007-04-17.

Journal code: 7609811. ISSN: 0309-2402.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals; Nursing Journals

ED Entered STN: 2 May 2007

Last Updated on STN: 29 May 2007

AB AIM: This paper is a report of a literature review to explore the prevalence of complementary and alternative medicine use amongst people with diabetes to inform nursing practice, education and research. BACKGROUND: Diabetes mellitus affects the entirety of a person's being and increasingly people use complementary and alternative medicine in conjunction with other medical treatments and lifestyle modifications to manage their condition and improve well-being. METHODS: The CINAHL, Medline, ProQuest nursing journals and Psych INFO databases were searched for the period 1990-2006 using identified keywords. RESULTS: A total of 18 studies from nine countries were found. The results suggest that the prevalence of complementary and alternative medicine use among people with diabetes ranges from 17% to 72.8%. The most widely used therapies among diabetic populations are nutritional supplements, herbal medicines, nutritional advice, spiritual healing and relaxation techniques. The characteristics which influence complementary and alternative medicine use are age, duration of diabetes, degree of complications and self-monitoring of blood glucose. CONCLUSION: Although inconsistency in the definition of complementary and alternative medicine and varying research designs make estimation of usage prevalence difficult, evidence suggests that a high proportion of people with diabetes use these therapies concurrently with conventional healthcare services. Healthcare professionals need to be aware of this issue and may need to incorporate complementary and alternative medicine information into patient assessment and intervention.

L8 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:1127061 CAPLUS

DN 144:345623

TI Trans-sialidase from Trypanosoma congolense - Isolation, characterization and molecular biology

AU Tiralongo, Evelin

CS Germany

SO (2004) No pp. given Avail.: Metadata on Internet Documents, Order No. 52901

From: Metadata Internet Doc. [Ger. Diss.] 2004, (D1014-4), No pp. given

URL: <http://www.meind.de/search.py?recid=52901>

DT Dissertation

LA English

AB Unavailable

L8 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:510002 CAPLUS

DN 141:84624

TI Trans-sialidases and genes of Trypanosoma congolense and their uses in enzymic sialidation and preparation of food and pharmaceuticals

IN Schauer, Roland; Tiralongo, Evelin; Boehm, Guenther; Stahl, Bernd; Schrader, Silke

PA N.V. Nutricia, Neth.

SO Ger. Offen., 33 pp:

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10258400	A1	20040624	DE 2002-10258400	20021213
	CA 2509070	A1	20040701	CA 2003-2509070	20031211
	WO 2004055176	A2	20040701	WO 2003-EP14079	20031211
	WO 2004055176	A3	20050526		
	W: AL, AU, CA, CN, ID, JP, LT, LV, MK, NZ, RU, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	AU 2003294833	A1	20040709	AU 2003-294833	20031211
	EP 1570054	A2	20050907	EP 2003-785794	20031211
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	CN 1726279	A	20060125	CN 2003-80106002	20031211
	JP 2006509515	T	20060323	JP 2004-559814	20031211
	US 2007004656	A1	20070104	US 2005-538840	20050613
PRAI	DE 2002-10258400	A	20021213		
	WO 2003-EP14079	W	20031211		

AB The invention concerns enzymes from T. congolense which transfer sialic acids from a donor mol. to an acceptor mol. (trans-sialidases) as well as the nucleic acids encoding these enzymes. These enzymes may be used for enzymic sialization of acceptor mols. as well as for screening for inhibitors of the enzymes. Also disclosed are uses of the nucleic acids, enzymes, effectors, or sialization products for production of antigens, medicines, food or food supplements. Thus, two trans-sialidases were isolated from T. congolense. Both displayed a temperature optimum of 30-40° and a pH optimum of 6.5-8.5. The native mol. weight of one was 400-600 kDa, of the other, 120-180 kDa. Both contained subunits of 90 kDa.

L8 ANSWER 4 OF 6 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 1

AN 2003:375019 BIOSIS

DN PREV200300375019

TI Two trans-sialidase forms with different sialic acid transfer and sialidase activities from Trypanosoma congolense.

AU Tiralongo, Evelin; Schrader, Silke; Lange, Hans; Lemke, Hilmar;

Tiralongo, Joe; Schauer, Roland [Reprint Author]

CS Biochemisches Institut, Universitaet zu Kiel, Olshausenstrasse 40, Kiel, 24098, Germany

schauer@biochem.uni-kiel.de

SO Journal of Biological Chemistry, (June 27 2003) Vol. 278, No. 26, pp. 23301-23310. print.

CODEN: JBCHA3. ISSN: 0021-9258.

DT Article

LA English

ED Entered STN: 13 Aug 2003

Last Updated on STN: 13 Aug 2003

AB Trypanosomes express an enzyme called trans-sialidase (TS), which enables

the parasites to transfer sialic acids from the environment onto trypanosomal surface molecules. Here we describe the purification and characterization of two TS forms from the African trypanosome *Trypanosoma congolense*. The purification of the two TS forms using a combination of anion exchange chromatography, isoelectric focusing, gel filtration, and subsequently, antibody affinity chromatography resulted, in both cases, in the isolation of a 90-kDa monomer on SDS-PAGE, which was identified as trans-sialidase using micro-sequencing. Monoclonal antibody 7/23, which bound and partially inhibited TS activity, was found in both cases to bind to a 90-kDa protein. Both TS forms possessed sialidase and transfer activity, but markedly differed in their activity ratios. The TS form with a high transfer-to-sialidase activity ratio, referred to as TS-form 1, possessed a pI of pH 4-5 and a molecular mass of 350-600 kDa. In contrast, the form with a low transfer-to-sialidase activity ratio, referred to as TS-form 2, exhibited a pI of pH 5-6.5 and a molecular mass of 130-180 kDa. Both TS forms were not significantly inhibited by known sialidase inhibitors and revealed no significant differences in donor and acceptor substrate specificities; however, TS-form 1 utilized various acceptor substrates with a higher catalytic efficiency. Interestingly, glutamic acid-alanine-rich protein, the surface glycoprotein, was co-purified with TS-form 1 suggesting an association between both proteins.

L8 ANSWER 5 OF 6 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 DUPLICATE 2
 AN 2003:525432 BIOSIS
 DN PREV200300528766
 TI Trans-sialidase-like sequences from *Trypanosoma congolense* conserve most
 of the critical active site residues found in other trans-sialidases.
 AU Tiralongo, Evelin; Martensen, Ilka; Groetzinger, Joachim;
 Tiralongo, Joe; Schauer, Roland [Reprint Author]
 CS Biochemisches Institut, Christian-Albrechts-Universitaet zu Kiel,
 Olshausenstrasse 40, D-24098, Kiel, Germany
 SO Biological Chemistry, (August 2003) Vol. 384, No. 8, pp. 1203-1213. print.
 ISSN: 1431-6730.
 DT Article
 LA English
 ED Entered STN: 12 Nov 2003
 Last Updated on STN: 12 Nov 2003
 AB *Trypanosoma congolense* is the agent of Nagana, the trypanosomiasis in
 African ruminants. Trypanosomes express an enzyme called trans-sialidase,
 which is believed to play an important role in maintaining pathogenicity
 of the parasites. Thus far, only two complete trans-sialidase sequences
 have been characterised, one from the American trypanosome *T. cruzi* and
 one from the African trypanosome *T. brucei brucei*. Although the crystal
 structure of *T. cruzi* trans-sialidase has recently been published
 (Buschiazio et al., Mol. Cell 10 (2002), pp. 757-768), a number of
 questions concerning the exact transfer mechanism remain unanswered. The
 availability of further trans-sialidase sequences will ensure a better
 understanding of how transfer activity can be achieved and will provide
 the opportunity to develop highly specific, structure-based
 trans-sialidase inhibitors. Utilising a PCR-based approach two different
 trans-sialidase gene copies from *T. congolense* were identified, which
 share only 50% identity with each other, but show significant similarity
 with known viral, bacterial and trypanosomal sialidases and
 trans-sialidases. In both partial sequences most of the critical active
 site residues common to other trypanosomal sialidases and trans-sialidases
 are conserved. This is further illustrated by modelling the active site
 of the longer of the two partial gene sequences.

L8 ANSWER 6 OF 6 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 DUPLICATE 3
 AN 2004:193248 BIOSIS
 DN PREV200400207215

TI A nonradioactive 96-well plate assay for screening of trans-sialidase activity.
 AU Schrader, Silke; Tiralongo, Evelin; Paris, Gaston; Yoshino, Teruo; Schauer, Roland [Reprint Author]
 CS Biochemisches Institut, Christian-Albrechts-Universitaet zu Kiel, 24098, Kiel, Germany
 schauer@biochem.uni-kiel.de
 SO Analytical Biochemistry, (November 15 2003) Vol. 322, No. 2, pp. 139-147. print.
 ISSN: 0003-2697 (ISSN print).
 DT Article
 LA English
 ED Entered STN: 14 Apr 2004
 Last Updated on STN: 14 Apr 2004
 AB Trans-sialidase (E.C. 3.2.1.18) catalyzes the transfer of preferably alpha2,3-linked sialic acid to another glycan or glycoconjugate, forming a new alpha2,3 linkage to galactose or N-acetylgalactosamine. Here, we describe a nonradioactive 96-well plate fluorescence test for monitoring trans-sialidase activity with high sensitivity, specificity, and reproducibility using sialyllactose and 4-methylumbelliferyl-beta-D-galactoside as donor and acceptor substrates, respectively. The assay conditions were optimized using the trans-sialidase from Trypanosoma congolense and its general applicability was confirmed with recombinant trans-sialidase from Trypanosoma cruzi. Using this procedure, a large number of samples can be tested quickly and reliably, for instance in monitoring trans-sialidase during enzyme purification and the production of monoclonal antibodies, for enzyme characterization, and for identifying potential substrates and inhibitors. The trans-sialidase assay reported here was capable of detecting trans-sialidase activity in the low-mU range and may be a valuable tool in the search for further trans-sialidases in various biological systems.

=> e schrader silke/au

E1	27	SCHRADER SIGURD/AU
E2	7	SCHRADER SIGURD K/AU
E3	20 -->	SCHRADER SILKE/AU
E4	1	SCHRADER SPELA/AU
E5	3	SCHRADER ST/AU
E6	48	SCHRADER STEFAN/AU
E7	13	SCHRADER STEFFI/AU
E8	4	SCHRADER STEPHAN/AU
E9	7	SCHRADER STEPHANIE/AU
E10	12	SCHRADER STEPHEN M/AU
E11	3	SCHRADER STEVE/AU
E12	2	SCHRADER STEVE M/AU

=> s e3

L9 20 "SCHRADER SILKE"/AU

=> dup rem l9

PROCESSING COMPLETED FOR L9

L10 11 DUP REM L9 (9 DUPLICATES REMOVED)

=> d bib ab 1-

YOU HAVE REQUESTED DATA FROM 11 ANSWERS - CONTINUE? Y/(N):y

L10 ANSWER 1 OF 11 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 AN 2007:246176 BIOSIS
 DN PREV200700247991
 TI Nonradioactive trans-sialidase screening assay.
 AU Schrader, Silke [Reprint Author]; Schauer, Roland
 CS Univ Cologne, Biochem Inst, Cologne, Germany
 SO Brockhausen, I [Editor]. Methods in Molecular Biology, (2006) pp. 93-107.

Methods in Molecular Biology.

Publisher: HUMANA PRESS INC, 999 RIVERVIEW DR, STE 208, TOTOWA, NJ 07512-1165 USA. Series: METHODS IN MOLECULAR BIOLOGY.

ISSN: 1064-3745. ISBN: 978-1-58829-553-8(H).

DT Book; (Book Chapter)

LA English

ED Entered STN: 18 Apr 2007

Last Updated on STN: 18 Apr 2007

AB Trans-sialidase (TS; E.C. 3.2.1.18) catalyzes the transfer of preferably α 2,3-linked sialic acid to another glycan or glycoconjugate, forming a new α 2,3-linkage to galactose or N-acetylgalactosamine. In the absence of an appropriate acceptor, TS acts as a sialidase, hydrolytically releasing glycosidically linked sialic acid. Interest in TS has increased rapidly in recent years owing to its great relevance to the pathogenicity of trypanosomes and its possible application in the regiospecific synthesis of sialylated carbohydrates and glycoconjugates. Recently, the authors described a newly developed nonradioactive screening test for monitoring TS activity (1). In this highly sensitive and specific assay, 4-methylumbelliferyl-beta-D-galactoside is used as acceptor substrate and sialyllactose as donor to fluorimetrically detect enzyme activity in the low mU range (similar to 0.1-1 mU/mL possible). The test can be applied to screen a large number of samples quickly and reliably during enzyme purification, for testing inhibitors, and for monitoring TS activity during the production of monoclonal antibodies (2). This chapter focuses on the main steps of this assay and gives detailed instructions for performing a nonradioactive TS 96-well-plate fluorescence test. In addition, it describes the controls necessary when starting to monitor an unknown TS and facts to be considered when testing new substrates and inhibitors.

L10 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 1

AN 2006:1238052 CAPLUS

DN 146:374653

TI Nonradioactive Trans-sialidase screening assay

AU Schrader, Silke; Schauer, Roland

CS Biochemisches Institut, University of Koeln, Cologne, Germany

SO Methods in Molecular Biology (Totowa, NJ, United States) (2006), 347(Glycobiology Protocols), 93-107

CODEN: MMBIED; ISSN: 1064-3745

PB Humana Press Inc.

DT Journal

LA English

AB Trans-sialidase (TS; E.C. 3.2.1.18) catalyzes the transfer of preferably α 2,3-linked sialic acid to another glycan or glycoconjugate, forming a new α 2,3-linkage to galactose or N-acetylgalactosamine. In the absence of an appropriate acceptor, TS acts as a sialidase, hydrolytically releasing glycosidically linked sialic acid. Interest in TS has increased rapidly in recent years owing to its great relevance to the pathogenicity of trypanosomes and its possible application in the regiospecific synthesis of sialylated carbohydrates and glycoconjugates. Recently, the authors described a newly developed nonradioactive screening test for monitoring TS activity. In this highly sensitive and specific assay, 4-methylumbelliferyl- β -D-galactoside is used as acceptor substrate and sialyllactose as donor to fluorimetrically detect enzyme activity in the low mU range (.apprx.0.1-1 mU/mL possible). The test can be applied to screen a large number of samples quickly and reliably during enzyme purification, for testing inhibitors, and for monitoring TS activity during the production of monoclonal antibodies. This chapter focuses on the main steps of this assay and gives detailed instructions for performing a nonradioactive TS 96-well-plate fluorescence test. In addition, it describes the controls necessary when starting to monitor an unknown TS and facts to be considered when testing new substrates and inhibitors.

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 2004:510002 CAPLUS
 DN 141:84624
 TI Trans-sialidases and genes of Trypanosoma congolense and their uses in enzymic sialidation and preparation of food and pharmaceuticals
 IN Schauer, Roland; Tiralongo, Evelin; Boehm, Guenther; Stahl, Bernd; Schrader, Silke
 PA N.V. Nutricia, Neth.
 SO Ger. Offen., 33 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10258400	A1	20040624	DE 2002-10258400	20021213
	CA 2509070	A1	20040701	CA 2003-2509070	20031211
	WO 2004055176	A2	20040701	WO 2003-EP14079	20031211
	WO 2004055176	A3	20050526		
	W: AL, AU, CA, CN, ID, JP, LT, LV, MK, NZ, RU, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	AU 2003294833	A1	20040709	AU 2003-294833	20031211
	EP 1570054	A2	20050907	EP 2003-785794	20031211
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	CN 1726279	A	20060125	CN 2003-80106002	20031211
	JP 2006509515	T	20060323	JP 2004-559814	20031211
	US 2007004656	A1	20070104	US 2005-538840	20050613
PRAI	DE 2002-10258400	A	20021213		
	WO 2003-EP14079	W	20031211		

AB The invention concerns enzymes from T. congolense which transfer sialic acids from a donor mol. to an acceptor mol. (trans-sialidases) as well as the nucleic acids encoding these enzymes. These enzymes may be used for enzymic sialization of acceptor mols. as well as for screening for inhibitors of the enzymes. Also disclosed are uses of the nucleic acids, enzymes, effectors, or sialization products for production of antigens, medicines, food or food supplements. Thus, two trans-sialidases were isolated from T. congolense. Both displayed a temperature optimum of 30-40° and a pH optimum of 6.5-8.5. The native mol. weight of one was 400-600 kDa, of the other, 120-180 kDa. Both contained subunits of 90 kDa.

L10 ANSWER 4 OF 11 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 DUPLICATE 2
 AN 2003:375019 BIOSIS
 DN PREV200300375019
 TI Two trans-sialidase forms with different sialic acid transfer and sialidase activities from Trypanosoma congolense.
 AU Tiralongo, Evelin; Schrader, Silke; Lange, Hans; Lemke, Hilmar; Tiralongo, Joe; Schauer, Roland [Reprint Author]
 CS Biochemisches Institut, Universitaet zu Kiel, Olshausenstrasse 40, Kiel, 24098, Germany
 schauer@biochem.uni-kiel.de
 SO Journal of Biological Chemistry, (June 27 2003) Vol. 278, No. 26, pp. 23301-23310. print.
 CODEN: JBCHA3. ISSN: 0021-9258.
 DT Article
 LA English
 ED Entered STN: 13 Aug 2003
 Last Updated on STN: 13 Aug 2003
 AB Trypanosomes express an enzyme called trans-sialidase (TS), which enables the parasites to transfer sialic acids from the environment onto

trypanosomal surface molecules. Here we describe the purification and characterization of two TS forms from the African trypanosome *Trypanosoma congolense*. The purification of the two TS forms using a combination of anion exchange chromatography, isoelectric focusing, gel filtration, and subsequently, antibody affinity chromatography resulted, in both cases, in the isolation of a 90-kDa monomer on SDS-PAGE, which was identified as trans-sialidase using micro-sequencing. Monoclonal antibody 7/23, which bound and partially inhibited TS activity, was found in both cases to bind to a 90-kDa protein. Both TS forms possessed sialidase and transfer activity, but markedly differed in their activity ratios. The TS form with a high transfer-to-sialidase activity ratio, referred to as TS-form 1, possessed a pI of pH 4-5 and a molecular mass of 350-600 kDa. In contrast, the form with a low transfer-to-sialidase activity ratio, referred to as TS-form 2, exhibited a pI of pH 5-6.5 and a molecular mass of 130-180 kDa. Both TS forms were not significantly inhibited by known sialidase inhibitors and revealed no significant differences in donor and acceptor substrate specificities; however, TS-form 1 utilized various acceptor substrates with a higher catalytic efficiency. Interestingly, glutamic acid-alanine-rich protein, the surface glycoprotein, was co-purified with TS-form 1 suggesting an association between both proteins.

L10 ANSWER 5 OF 11 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 3
AN 2004:193248 BIOSIS
DN PREV200400207215
TI A nonradioactive 96-well plate assay for screening of trans-sialidase
activity.
AU Schrader, Silke; Tiralongo, Evelin; Paris, Gaston; Yoshino,
Teruo; Schauer, Roland [Reprint Author]
CS Biochemisches Institut, Christian-Albrechts-Universitaet zu Kiel, 24098,
Kiel, Germany
schauer@biochem.uni-kiel.de
SO Analytical Biochemistry, (November 15 2003) Vol. 322, No. 2, pp. 139-147.
print.
ISSN: 0003-2697 (ISSN print).
DT Article
LA English
ED Entered STN: 14 Apr 2004
Last Updated on STN: 14 Apr 2004
AB Trans-sialidase (E.C. 3.2.1.18) catalyzes the transfer of preferably
alpha2,3-linked sialic acid to another glycan or glycoconjugate, forming a
new alpha2,3 linkage to galactose or N-acetylgalactosamine. Here, we
describe a nonradioactive 96-well plate fluorescence test for monitoring
trans-sialidase activity with high sensitivity, specificity, and
reproducibility using sialyllactose and 4-methylumbelliferyl-beta-D-
galactoside as donor and acceptor substrates, respectively. The assay
conditions were optimized using the trans-sialidase from *Trypanosoma*
congolense and its general applicability was confirmed with recombinant
trans-sialidase from *Trypanosoma cruzi*. Using this procedure, a large
number of samples can be tested quickly and reliably, for instance in
monitoring trans-sialidase during enzyme purification and the production
of monoclonal antibodies, for enzyme characterization, and for identifying
potential substrates and inhibitors. The trans-sialidase assay reported
here was capable of detecting trans-sialidase activity in the low-mU range
and may be a valuable tool in the search for further trans-sialidases in
various biological systems.

L10 ANSWER 6 OF 11 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 4
AN 2002:526974 BIOSIS
DN PREV200200526974
TI Seasonal changes of sucrose-phosphate synthase and sucrose synthase
activities in poplar wood (*PopulusXcanadensis* Moench 'robusta') and their

possible role in carbohydrate metabolism.

AU Schrader, Silke [Reprint author]; Sauter, Joerg J.
CS Botanisches Institut der Universitaet Kiel, Olshausenstr. 40, D-24098,
Kiel, Germany
sschrader@uni-koeln.de
SO Journal of Plant Physiology, (August, 2002) Vol. 159, No. 8, pp. 833-843.
print.
CODEN: JPPHEY. ISSN: 0176-1617.
DT Article
LA English
ED Entered STN: 9 Oct 2002
Last Updated on STN: 9 Oct 2002
AB Two important enzymes of sucrose metabolism, sucrose-phosphate synthase (SPS, EC 2.4.1.14) and sucrose synthase (SuSy, EC 2.4.1.13), were investigated in the ray parenchyma cells of the trunk wood of *PopulusXcanadensis* Moench 'robusta' throughout the year. The activity of SPS increases dramatically in autumn in parallel with leaf fall, reaches a maximum level in winter at the time of the starch-to-sugar conversion and declines in spring during starch resynthesis and mobilisation. In summer, the activity of SPS remains at a very low level. These seasonal changes in SPS activity were identical both under Vmax- and under Vjim-assay conditions. In temperature-controlled storage experiments with twig sections, the activation state of SPS, termed as Vjim/VmaxX100, was substantially higher after storage at -5degreeC in contrast to storage at +10degreeC. A Western blot analysis, using a polyclonal antibody, revealed a molecular weight of about 130 kD for the SPS-polypeptide in poplar wood with highest levels of SPS enzyme protein in winter and lowest levels in summer. SPS of other tree species (*Acer*, *Fagus*, *Salix*) exhibited a molecular weight in a similar range. The activity of SuSy started to increase in late autumn, was high in winter and declined in spring. In contrast to SPS, SuSy shows a remarkably high activity in the outer wood area in summer while it remained low in the middle and inner area of the trunk wood. This high SuSy activity correlates with the differentiation of the xylem cells rather than with starch deposition. The significance of the SPS in autumn and winter for the starch-to-sugar conversion during cold adaptation of xylem parenchyma cells and of the SuSy for wood formation processes is discussed.

L10 ANSWER 7 OF 11 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 5
AN 2001:439757 BIOSIS
DN PREV200100439757
TI Rapid, ATP-dependent degradation of a truncated D1 protein in the
chloroplast.
AU Preiss, Susanne; Schrader, Silke; Johanningmeier, Udo [Reprint
author]
CS Martin-Luther-Universitaet Halle-Wittenberg, Institut fuer
Pflanzenphysiologie, Weinbergweg 10, 06120, Halle-Saale, Germany
johanningmeier@pflanzenphys.uni-halle.de
SO European Journal of Biochemistry, (August, 2001) Vol. 268, No. 16, pp.
4562-4569. print.
CODEN: EJBCAI. ISSN: 0014-2956.
DT Article
LA English
ED Entered STN: 19 Sep 2001
Last Updated on STN: 22 Feb 2002
AB The D1 protein constitutes one of the reaction center subunits of
photosystem II and turns over rapidly due to photooxidative damage. Here,
we studied the degradation of a truncated D1 protein. A plasmid with a
precise deletion in the reading frame of the *psbA* gene encoding D1 was
introduced into the chloroplast of *Chlamydomonas reinhardtii*. A
homoplasmic mutant containing the desired gene was able to synthesize the
truncated form of the polypeptide, but could not accumulate significant
levels of it. As a consequence, other central photosystem II subunits did

not assemble within the thylakoid membrane. In vivo pulse-chase experiments showed that the abnormal D1 protein is rapidly degraded in the light. Degradation was delayed in the light in the presence of an uncoupler, or when cells were incubated in the dark. Pulse-chase experiments performed in vitro indicate that an ATP and metal-dependent protease is responsible for the breakdown process. The paper describes the first in vivo and in vitro functional test for ATP-dependent degradation of a defect polypeptide in chloroplasts. The possible involvement of proteases similar to those removing abnormal proteins in prokaryotic organisms is discussed on the basis of proteases recently identified in chloroplasts.

L10 ANSWER 8 OF 11 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 6

AN 2000:364152 BIOSIS

DN PREV200000364152

TI Sequence of the two operons encoding the four core subunits of the cytochrome b6f complex from the thermophilic cyanobacterium *Synechococcus elongatus*.

AU Schneider, Dirk; Altenfeld, Ursula; Thomas, Heike; Schrader, Silke ; Muehlenhoff, Ulrich; Roegner, Matthias [Reprint author]

CS Lehrstuhl fuer Biochemie der Pflanzen, Fakultae fuer Biologie, Ruhr-Universitaet Bochum, D-44780, Bochum, Germany

SO Biochimica et Biophysica Acta, (April 25, 2000) Vol. 1491, No. 1-3, pp. 364-368. print.

CODEN: BBACAQ. ISSN: 0006-3002.

DT Article

LA English

OS Genbank-AJ243535; EMBL-AJ243535; DDBJ-AJ243535; Genbank-AJ243707; EMBL-AJ243707; DDBJ-AJ243707

ED Entered STN: 23 Aug 2000

Last Updated on STN: 8 Jan 2002

AB The genes encoding cytochrome f (petA), cytochrome b6 (petB), the Rieske FeS-protein (petC), and subunit IV (petD) of the cytochrome b6f complex from the thermophilic cyanobacterium *Synechococcus elongatus* were cloned and sequenced. Similar to other cyanobacteria, the structural genes are arranged in two short, single-copy operons, petC/petA and petB/petD, respectively. In addition, five open reading frames with homology to known orfs from the cyanobacterium *Synechocystis* PCC 6803 were identified in the immediate vicinity of these two operons.

L10 ANSWER 9 OF 11 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN

AN 2001:93151 BIOSIS

DN PREV200100093151

TI Trypanosomal transsialidase; a multi-talented "glycosyltransferase".

AU Raudies, Evelin [Reprint author]; Schrader, Silke [Reprint author]; Engstler, Markus; Schauer, Roland [Reprint author]

CS Biochemisches Institut, Christian-Albrechts-Universitaet zu Kiel, 24098, Kiel, Germany

SO Glycoconjugate Journal, (January-February, 2000) Vol. 17, No. 1-2, pp. 56. print.

Meeting Info.: Second International Glycosyltransferase Symposium.

Toronto, Ontario, Canada. May 12-14, 2000.

ISSN: 0282-0080.

DT Conference; (Meeting)

Conference; Abstract; (Meeting Abstract)

LA English

ED Entered STN: 21 Feb 2001

Last Updated on STN: 12 Feb 2002

L10 ANSWER 10 OF 11 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on
STN DUPLICATE 7

AN 1996:386115 BIOSIS

DN PREV199699108471

TI Asparagine catabolism in bryophytes: Purification and characterization of two L-asparaginase isoforms from *Sphagnum fallax*.
 AU Heesch, Volker; Matlok, Johannes; Schrader, Silke; Rudolph, Hansjorg [Reprint author]
 CS Botanisches Inst. der Christian-Albrechts-Univ. zu Kiel, Biologiezentrum, Olshausenstrasse 20-40, D-24098 Kiel, Germany
 SO Physiologia Plantarum, (1996) Vol. 97, No. 2, pp. 402-410.
 CODEN: PHPLAI. ISSN: 0031-9317.

DT Article

LA English

ED Entered STN: 26 Aug 1996

Last Updated on STN: 26 Aug 1996

AB Nitrogen represents a critical nutrient in raised bogs. In *Sphagnum*, dominating this habitat, the prevalent storage amino acid asparagine is catabolized predominantly by the enzyme L-asparaginase (EC 3.5.1.1). L-asparaginase activity has been detected in each of 10 *Sphagnum* species investigated. In *Sphagnum fallax* Klinggr. (Klinggr. clone 1) cultivated under axenic conditions in continuous feed bioreactors, the enzyme displayed a light dependent increase in activity. We separated two isoforms, designated L-asparaginase 1 and 2, characterized by their different elution patterns from an anion-exchange column. In stem segments only L-asparaginase 2 could be detected, whereas in capitulae L-asparaginase 1 represented the dominating isoform. Purified chloroplasts displayed no L-asparaginase activity. Almost the entire activity was located in the cytosolic fraction. L-asparaginase 1 and 2 have been purified 82-fold and 188-fold, respectively, by ion-exchange, size-exclusion and hydrophobic interaction chromatography. Identical pH optima (8.2) and molecular weights (126,000) were determined. The K_m values for asparagine (7.4 mM for L-asparaginase 1 and 6.2 mM for L-asparaginase 2) were in the range of those described for higher plants. On the other hand *Sphagnum* L-asparaginase is comprised of four subunits as are the L-asparaginases of microorganisms. So, the characteristics of the bryophyte enzyme appear to be intermediate between those from higher plants and those from microorganisms.

L10 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1992:528349 CAPLUS

DN 117:128349

TI The carboxy-terminal extension of the D1-precursor protein is dispensable for a functional photosystem II complex in *Chlamydomonas reinhardtii*

AU Schrader, Silke; Johanningmeier, Udo

CS Ruhr-Univ. Bochum, Bochum, 4630, Germany

SO Plant Molecular Biology (1992), 19(2), 251-6

CODEN: PMBIDB; ISSN: 0167-4412

DT Journal

LA English

AB The D1-precursor protein of the photosystem II reaction center contains a carboxy-terminal extension whose proteolytic removal is necessary for oxygen-evolving activity. To address the question of the role of the carboxy-terminal extension in the green alga *C. reinhardtii*, D1 was truncated by converting codon Ser345 of the *psbA* gene into a stop codon. Particle gun transformation of an in vitro modified *psbA* gene fragment also carrying mutations conferring herbicide resistance yielded a homoplasmic transformant containing the stop codon. Since oxygen evolution capacity is not affected in this mutant as compared with herbicide-resistant control cells, the carboxy-terminal extension is dispensable for a functional photosystem II complex under normal growth conditions.

=> s congolense and ((trans sialidase?)or(transsialidas?))

L11 25 CONGOLENSE AND ((TRANS SIALIDASE?) OR(TRANSSIALIDAS?))

=> dup rem l11

PROCESSING COMPLETED FOR L11

L12 9 DUP REM L11 (16 DUPLICATES REMOVED)

=> d bib ab 1-

YOU HAVE REQUESTED DATA FROM 9 ANSWERS - CONTINUE? Y/(N):y

L12 ANSWER 1 OF 9 MEDLINE on STN

AN 2006635770 MEDLINE

DN PubMed ID: 17072006

TI Nonradioactive trans-sialidase screening assay.

AU Schrader Silke; Schauer Roland

CS Biochemisches Institut, University of Koln, Koln, Germany.

SO Methods in molecular biology (Clifton, N.J.), (2006) Vol. 347, pp. 93-107.

Journal code: 9214969. ISSN: 1064-3745.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

(RESEARCH SUPPORT, NON-U.S. GOV'T)

LA English

FS Priority Journals

EM 200701

ED Entered STN: 31 Oct 2006

Last Updated on STN: 31 Jan 2007

Entered Medline: 30 Jan 2007

AB Trans-sialidase (TS; E.C. 3.2.1.18) catalyzes the transfer of preferably alpha2,3-linked sialic acid to another glycan or glycoconjugate, forming a new alpha2,3-linkage to galactose or N-acetylgalactosamine. In the absence of an appropriate acceptor, TS acts as a sialidase, hydrolytically releasing glycosidically linked sialic acid. Interest in TS has increased rapidly in recent years owing to its great relevance to the pathogenicity of trypanosomes and its possible application in the regiospecific synthesis of sialylated carbohydrates and glycoconjugates. Recently, the authors described a newly developed nonradioactive screening test for monitoring TS activity (1). In this highly sensitive and specific assay, 4-methylumbelliferyl-beta-D-galactoside is used as acceptor substrate and sialyllactose as donor to fluorimetrically detect enzyme activity in the low mU range (approximately 0.1-1 mU/mL possible). The test can be applied to screen a large number of samples quickly and reliably during enzyme purification, for testing inhibitors, and for monitoring TS activity during the production of monoclonal antibodies (2). This chapter focuses on the main steps of this assay and gives detailed instructions for performing a nonradioactive TS 96-well-plate fluorescence test. In addition, it describes the controls necessary when starting to monitor an unknown TS and facts to be considered when testing new substrates and inhibitors.

L12 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:1127061 CAPLUS

DN 144:345623

TI Trans-sialidase from Trypanosoma congolense

- Isolation, characterization and molecular biology

AU Tiralongo, Evelin

CS Germany

SO (2004) No pp. given Avail.: Metadata on Internet Documents, Order No. 52901

From: Metadata Internet Doc. [Ger. Diss.] 2004, (D1014-4), No pp. given

URL: <http://www.meind.de/search.py?recid=52901>

DT Dissertation

LA English

AB Unavailable

L12 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:510002 CAPLUS

DN 141:84624

TI Trans-sialidases and genes of Trypanosoma
congolense and their uses in enzymic sialidation and preparation
of food and pharmaceuticals

IN Schauer, Roland; Tiralongo, Evelin; Boehm, Guenther; Stahl, Bernd;
Schrader, Silke

PA N.V. Nutricia, Neth.

SO Ger. Offen., 33 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10258400	A1	20040624	DE 2002-10258400	20021213
	CA 2509070	A1	20040701	CA 2003-2509070	20031211
	WO 2004055176	A2	20040701	WO 2003-EP14079	20031211
	WO 2004055176	A3	20050526		
	W: AL, AU, CA, CN, ID, JP, LT, LV, MK, NZ, RU, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,				
	IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	AU 2003294833	A1	20040709	AU 2003-294833	20031211
	EP 1570054	A2	20050907	EP 2003-785794	20031211
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				
	IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	CN 1726279	A	20060125	CN 2003-80106002	20031211
	JP 2006509515	T	20060323	JP 2004-559814	20031211
	US 2007004656	A1	20070104	US 2005-538840	20050613
PRAI	DE 2002-10258400	A	20021213		
	WO 2003-EP14079	W	20031211		

AB The invention concerns enzymes from T. congolense which transfer sialic acids from a donor mol. to an acceptor mol. (trans-sialidases) as well as the nucleic acids encoding these enzymes. These enzymes may be used for enzymic sialization of acceptor mols. as well as for screening for inhibitors of the enzymes. Also disclosed are uses of the nucleic acids, enzymes, effectors, or sialization products for production of antigens, medicines, food or food supplements. Thus, two trans-sialidases were isolated from T. congolense. Both displayed a temperature optimum of 30-40° and a pH optimum of 6.5-8.5. The native mol. weight of one was 400-600 kDa, of the other, 120-180 kDa. Both contained subunits of 90 kDa.

L12 ANSWER 4 OF 9 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 1

AN 2003:375019 BIOSIS

DN PREV200300375019

TI Two trans-sialidase forms with different sialic acid
transfer and sialidase activities from Trypanosoma congolense.

AU Tiralongo, Evelin; Schrader, Silke; Lange, Hans; Lemke, Hilmar; Tiralongo,
Joe; Schauer, Roland [Reprint Author]

CS Biochemisches Institut, Universitaet zu Kiel, Olshausenstrasse 40, Kiel,
24098, Germany
schauer@biochem.uni-kiel.de

SO Journal of Biological Chemistry, (June 27 2003) Vol. 278, No. 26, pp.
23301-23310. print.

CODEN: JBCHA3. ISSN: 0021-9258.

DT Article

LA English

ED Entered STN: 13 Aug 2003

Last Updated on STN: 13 Aug 2003

AB Trypanosomes express an enzyme called trans-sialidase (TS), which enables the parasites to transfer sialic acids from the environment onto trypanosomal surface molecules. Here we describe the purification and characterization of two TS forms from the African trypanosome Trypanosoma congolense. The purification of the two

TS forms using a combination of anion exchange chromatography, isoelectric focusing, gel filtration, and subsequently, antibody affinity chromatography resulted, in both cases, in the isolation of a 90-kDa monomer on SDS-PAGE, which was identified as trans-sialidase using micro-sequencing. Monoclonal antibody 7/23, which bound and partially inhibited TS activity, was found in both cases to bind to a 90-kDa protein. Both TS forms possessed sialidase and transfer activity, but markedly differed in their activity ratios. The TS form with a high transfer-to-sialidase activity ratio, referred to as TS-form 1, possessed a pI of pH 4-5 and a molecular mass of 350-600 kDa. In contrast, the form with a low transfer-to-sialidase activity ratio, referred to as TS-form 2, exhibited a pI of pH 5-6.5 and a molecular mass of 130-180 kDa. Both TS forms were not significantly inhibited by known sialidase inhibitors and revealed no significant differences in donor and acceptor substrate specificities; however, TS-form 1 utilized various acceptor substrates with a higher catalytic efficiency. Interestingly, glutamic acid-alanine-rich protein, the surface glycoprotein, was co-purified with TS-form 1 suggesting an association between both proteins.

L12 ANSWER 5 OF 9 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 DUPLICATE 2
 AN 2003:525432 BIOSIS
 DN PREV200300528766
 TI Trans-sialidase-like sequences from Trypanosoma
 congolense conserve most of the critical active site residues
 found in other trans-sialidases.
 AU Tiralongo, Evelin; Martensen, Ilka; Groetzinger, Joachim; Tiralongo, Joe;
 Schauer, Roland [Reprint Author]
 CS Biochemisches Institut, Christian-Albrechts-Universitaet zu Kiel,
 Olshausenstrasse 40, D-24098, Kiel, Germany
 SO Biological Chemistry, (August 2003) Vol. 384, No. 8, pp. 1203-1213. print.
 ISSN: 1431-6730.
 DT Article
 LA English
 ED Entered STN: 12 Nov 2003
 Last Updated on STN: 12 Nov 2003
 AB Trypanosoma congolense is the agent of Nagana, the
 trypanosomiasis in African ruminants. Trypanosomes express an enzyme
 called trans-sialidase, which is believed to play an
 important role in maintaining pathogenicity of the parasites. Thus far,
 only two complete trans-sialidase sequences have been
 characterised, one from the American trypanosome T. cruzi and one from the
 African trypanosome T. brucei brucei. Although the crystal structure of
 T. cruzi trans-sialidase has recently been published
 (Buschiazso et al., Mol. Cell 10 (2002), pp. 757-768), a number of
 questions concerning the exact transfer mechanism remain unanswered. The
 availability of further trans-sialidase sequences will
 ensure a better understanding of how transfer activity can be achieved and
 will provide the opportunity to develop highly specific, structure-based
 trans-sialidase inhibitors. Utilising a PCR-based
 approach two different trans-sialidase gene copies
 from T. congolense were identified, which share only 50%
 identity with each other, but show significant similarity with known
 viral, bacterial and trypanosomal sialidases and trans-
 sialidases. In both partial sequences most of the critical active
 site residues common to other trypanosomal sialidases and trans-
 sialidases are conserved. This is further illustrated by
 modelling the active site of the longer of the two partial gene sequences.

L12 ANSWER 6 OF 9 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 DUPLICATE 3
 AN 2003:512305 BIOSIS
 DN PREV200300515634

TI A bloodstream *Trypanosoma congolense* sialidase could be involved
 in anemia during experimental trypanosomiasis.
 AU Nok, Andrew J. [Reprint Author]; Balogun, Emmanuel O.
 CS Department of Biochemistry, Ahmadu Bello University Zaria, Zaria, Nigeria
 jandrew@skannet.com
 SO Journal of Biochemistry (Tokyo), (Jun 2003) Vol. 133, No. 6, pp. 725-730.
 print.
 CODEN: JOBIAO. ISSN: 0021-924X.
 DT Article
 LA English
 ED Entered STN: 5 Nov 2003
 Last Updated on STN: 5 Nov 2003
 AB The release of Sialic acid (SA) into the serum by *Trypanosoma*
congolense infected BalbC mice was investigated. A progressive
 increase in the level of serum SA corresponding to anemia and parasitemia
 was observed. At maximum parasitemia, the level of total SA from the red
 blood cells (RBC) dropped by about 45%. Solved polynomials revealed an
 association between free serum SA and RBC-SA. Positive roots of
 quadratics were used to predict complete cleavage of RBC-SA on day 7.01
 and maximum accumulation of free serum SA on day 6.6. A steady rise in
 the level of serum sialidase (SD) activity and a low packed cell volume
 (PCV) with an increase in parasitemia were observed. Mice infused with
 galactose, methyl-beta-gal, lactose, mannose, or L-arabinose and
 challenged by intraperitoneal inoculation with *Trypanosoma*
congolense neither developed anemia nor secreted free SA above the
 control level even though there was detectable SD activity. Bloodstream
Trypanosoma congolense parasites were isolated using DEAE
 cellulose from heparinized blood of experimentally infected BalbC mice.
 The parasites were lysed with 0.2% Triton-CF 54 to release membrane bound
 SD. The activity of the SD was proportional to the number of parasites.
 The enzyme was partially purified on Q-Sepharose and Fetus agarose
 columns successively. The final active fraction from the latter column
 was used as the partially purified SD. The enzyme had an optimum pH of 6
 and was maximally active at 37degreeC with a requirement for the divalent
 ions Ca²⁺ and Mg²⁺. The enzyme was highly specific for NeuAc5alpha2,3 lac
 and Methylumbelliferyl-Neu5Ac (4-MU-Neu5Ac) with KM values of 0.34 and
 0.025 mM, respectively. It was inhibited competitively by
 2,3-didehydroneuraminic acid (Neu5Ac2en) and para-nitro-phenyloxamic acid
 (pNPO) with inhibition binding constants Ki of 65 and 215 muM,
 respectively. In deviation from the procyclic trypanosomal SD, it lacked
 trans-sialidase (TS) activity. The possible role of a
 secreted bloodstream *Trypanosoma congolense* SD and the
 development of anemia in the pathogenesis of trypanosomiasis are
 discussed.

L12 ANSWER 7 OF 9 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 DUPLICATE 4
 AN 2004:193248 BIOSIS
 DN PREV200400207215
 TI A nonradioactive 96-well plate assay for screening of trans-
 sialidase activity.
 AU Schrader, Silke; Tiralongo, Evelin; Paris, Gaston; Yoshino, Teruo;
 Schauer, Roland [Reprint Author]
 CS Biochemisches Institut, Christian-Albrechts-Universitaet zu Kiel, 24098,
 Kiel, Germany
 schauer@biochem.uni-kiel.de
 SO Analytical Biochemistry, (November 15 2003) Vol. 322, No. 2, pp. 139-147.
 print.
 ISSN: 0003-2697 (ISSN print).
 DT Article
 LA English
 ED Entered STN: 14 Apr 2004
 Last Updated on STN: 14 Apr 2004
 AB Trans-sialidase (E.C. 3.2.1.18) catalyzes the transfer

of preferably alpha2,3-linked sialic acid to another glycan or glycoconjugate, forming a new alpha2,3 linkage to galactose or N-acetylgalactosamine. Here, we describe a nonradioactive 96-well plate fluorescence test for monitoring trans-sialidase activity with high sensitivity, specificity, and reproducibility using sialyllactose and 4-methylumbelliferyl-beta-D-galactoside as donor and acceptor substrates, respectively. The assay conditions were optimized using the trans-sialidase from *Trypanosoma congolense* and its general applicability was confirmed with recombinant trans-sialidase from *Trypanosoma cruzi*. Using this procedure, a large number of samples can be tested quickly and reliably, for instance in monitoring trans-sialidase during enzyme purification and the production of monoclonal antibodies, for enzyme characterization, and for identifying potential substrates and inhibitors. The trans-sialidase assay reported here was capable of detecting trans-sialidase activity in the low-mU range and may be a valuable tool in the search for further trans-sialidases in various biological systems.

L12 ANSWER 8 OF 9 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 AN 2001:93151 BIOSIS
 DN PREV200100093151
 TI Trypanosomal transsialidase; a multi-talented
 "glycosyltransferase".
 AU Raudies, Evelin [Reprint author]; Schrader, Silke [Reprint author];
 Engstler, Markus; Schauer, Roland [Reprint author]
 CS Biochemisches Institut, Christian-Albrechts-Universitaet zu Kiel, 24098,
 Kiel, Germany
 SO Glycoconjugate Journal, (January-February, 2000) Vol. 17, No. 1-2, pp. 56.
 print.
 Meeting Info.: Second International Glycosyltransferase Symposium.
 Toronto, Ontario, Canada. May 12-14, 2000.
 ISSN: 0282-0080.
 DT Conference; (Meeting)
 Conference; Abstract; (Meeting Abstract)
 LA English
 ED Entered STN: 21 Feb 2001
 Last Updated on STN: 12 Feb 2002

L12 ANSWER 9 OF 9 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 DUPLICATE 5
 AN 1995:363134 BIOSIS
 DN PREV199598377434
 TI Distribution of developmentally regulated trans-
 sialidases in the kinetoplastida and characterization of a shed
 trans-sialidase activity from procyclic *Trypanosoma*
congolense.
 AU Engstler, M.; Schauer, R. [Reprint author]; Brun, R.
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AB The expression of developmentally regulated sialidase and trans-
 sialidase activities in kinetoplastid protozoa was investigated.
 The occurrence of these enzymes was found not to be a common feature among
 the Kinetoplastida, but to be restricted to distinct developmental life
 cycle stages of only a few species. While sialidases without
 trans-sialylating activities were demonstrated in *Trypanosoma vivax* and *T.*
rangeli, trans-sialidase activity is expressed
 throughout the brucei-group and in *T. congolense*. Neither *T.*
evansi, nor *T. equiperdum* express sialidases or trans-

sialidases. Furthermore, the absence of both, sialidase and trans-sialidase activities was proven in the *Leishmania*, *Crithidia*, *Herpetomonas*, *Leptomonas* and *Phytomonas*, respectively. In all species tested, the occurrence of sialic acids coincides with the expression of trans-sialidase activity. Those parasites, which lack trans-sialidases or only display regular sialidases, also lack cell-bound sialic acids. The regular sialidase activity from bloodstream form *T. vivax* was characterized. The trans-sialidase from *T. congolense* is restricted to the procyclic culture forms and is shed into the culture medium. The enzyme has a pH-optimum at pH 7.0, displays sensitivity towards chlorides and is resistant against commonly used sialidase inhibitors. *T. congolense* trans-sialidase transfers preferentially $\alpha(2-3)$ -linked sialic acids onto terminal beta-galactose residues. Also hydroxylated sialic acids (Neu5Gc) are transferred. The major glycoprotein GARP from procyclic *T. congolense* was identified as one potential natural sialic acid acceptor on the parasite's surface. In order to facilitate the characterization of trans-sialidases a novel, fluorimetric trans-sialidase assay was developed.